

Example # 6: A proton travels undeflected at 1.1×10^5 m/s through crossed electric and magnetic fields. If $B = 0.50$ T, determine the electric field strength E .

- if undeflected, $F_{\text{net}} = 0$

$$\text{so } F_E = F_{\text{mag}}$$

$$qE = qvB$$

$$E = (1.1 \times 10^5)(0.50)$$

$$E = 5.5 \times 10^4 \text{ N/C}$$